

Shaping the Future of EMS in California

QUALITY IMPROVEMENT VISION SUBCOMMITTEE #2

This report focuses on aspects of quality improvement in the statewide EMS system. It identifies the current status of quality improvement in the EMS system and recommends a rapid cycle improvement approach to enhancing the quality of EMS services.

The goal of EMS system quality improvement is to design and implement a practical and efficient process to measure and evaluate the quality of emergency medical services that leads to continuous and measurable improvements. Currently, there is a serious lack of effective oversight, structure and process in the approach to EMS quality improvement. Although there are pockets of excellence and numerous grant funded projects, clear statewide standards and benchmarks are lacking. The need for an effective quality improvement process in the EMS system has been documented at both the federal and state levels.

The approach proposed by the Vision Task Force on Quality Improvement is based on a practical approach to enhancing performance in diverse organizations. A new concept called rapid cycle quality improvement has been documented and is being tested in several consortia throughout the country. These include the Vermont Oxford Neonatal Network, the California Perinatal Network, and more recently the Children's Health and Accountability Initiative (CHAI). The CHAI consortium consists of twelve children's hospitals that are using the method to define and improve the quality of care for hospitalized children.

The two cornerstone principles of rapid cycle improvement are: 1) sharing of comparable data to develop benchmarks and best practices and; 2) making frequent and continuous changes in how services are delivered based upon the benchmarks. In the EMS context, leading organizations should voluntarily agree to identify a minimum set of indicators for quality improvement in each of three areas: the field, dispatch, and the hospital. In year 1, leading organizations in each of these areas form a consortium and work independently and concurrently in their area of emphasis. Results are shared, evaluated, and published where appropriate. Standards and benchmarks will be developed and refined in this ongoing process. Year 2 and beyond will build upon the first year and will be focused on greater statewide involvement from both urban and rural regions, sharing results in a coordinated effort with EMSA in the development of statewide standards and benchmarks, and developing a comprehensive method for continuously evaluating EMS system quality. This report provides specific tasks, as well as, implementation recommendations for statewide EMS system quality improvement.

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QUALITY IMPROVEMENT VISION COMMITTEE #2

Goal:

The goal of EMS system quality improvement is: To design and implement a practical and efficient process to measure and evaluate the quality of emergency medical services that leads to continuous and measurable improvements.

Findings:

Despite considerable work and special project funding, there is great need for an effective evaluation model for statewide EMS system evaluation.

- Presently, the California statewide EMS system is unable to determine how well it performs in reducing mortality and morbidity.
- There is a serious lack of effective structure and oversight in the approach to EMS quality improvement. This structure is necessary to guide the QI process.
- There is no statewide process for developing guidelines or standards. Current guidelines are fragmented and arbitrary. There is a need for clear standards and benchmarks.
- There is great need for a coordinated and integrated system for conducting effective EMS system evaluation. Currently, there is no ability to track the clinical course of a patient in the EMS system or link data throughout the continuum of care (dispatch, field, hospital, discharge, and post-discharge).

Background:

The need for an effective evaluation model for EMS systems has been documented at both the federal and state levels.

- At the national level the National Highway Traffic Administration (NHTSA) states in *Emergency Medical Services: Agenda for the Future*, 1996¹:

“The ability of EMS systems to optimally meet future community and individual patient needs is dependent upon the development of an effective evaluation process that can assess and improve the quality of services provided.”

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- At the state level, numerous grant funded efforts to address quality improvement in EMS systems have been conducted. Examples include:
 - The California EMS Quality Improvement Model – San Mateo County
 - Mountain-Valley EMS Agency Continuous Quality Improvement Program Document
 - Alameda County Internal Quality Improvement Plan
- Many efforts have focused on theoretical approaches to EMS quality improvement without a clear practical application or implementation.
- Some excellent resources have been developed, however, they have not been implemented on a statewide basis.
- While there is information on structural attributes of EMS systems, there is a relative paucity of information on process and outcome measures (clinical, patient satisfaction, and financial outcomes) and on uniform standards for EMS system evaluation of quality.

Examples:

- Currently, throughout California, EMS provider agencies measure incident response time in several different ways. Some measure response time from the time a call is received at the public safety answering point (PSAP), others from the time a call is received at medical dispatch, and still others from the time the responding unit is notified.
- Currently, it is difficult to evaluate the effectiveness of prehospital care services delivered to any patient, even the most seriously ill or injured (e.g. cardiac arrest, major trauma, etc.), as hospitals are under no obligation to provide follow-up information or clinical findings to participating EMS agencies.

A Practical Approach to Medical Quality Improvement:

The approach proposed by the Vision Task Force on Quality Improvement is based on a practical approach to enhancing performance in diverse organizations.² A new concept called rapid cycle quality improvement is being tested in several consortia throughout the country. These include the Vermont Oxford Neonatal Network, the California Perinatal Network, and more recently the Children's Health and Accountability Initiative (CHAI). The CHAI consortium consists of twelve children's hospitals, which are using the method to define and improve the quality of care for hospitalized children.

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The two cornerstone principles of rapid cycle improvement are: 1) sharing of comparable data to develop benchmarks and best practices and; 2) to make frequent and continuous changes in how services are delivered based upon the benchmarks.

Year 1:

Leading EMS systems would voluntarily agree to identify a minimum set of indicators for quality improvement, develop comparable definitions, and share their results with each other. Further, the results from sharing such information by those actually involved will lead to rapid cycle improvement. Specifically,

- This approach proposes that leaders of five major EMS dispatch centers throughout California come together and identify two or three indicators for quality improvement. These might relate to reducing response time, to developing standing orders, or to giving medical advice to a caller.
- Similarly, leaders of five pre-hospital organizations come together and agree on two or three indicators that occur in the field. These should include the implementation of a new procedure, the utilization of a drug or procedure, or testing of standing orders.
- Further, leaders of five hospitals, who see large volumes of patients transported through the EMS system, should identify two or three indicators for quality improvement based on a particular outcome or diagnostic procedure.
- As the consortiums meet and share data, they begin to improve their own performance in real time and on an ongoing basis. When appropriate each of the consortia could evaluate and publish their results for the field.
- Standards and benchmarks are developed and refined based on these results.

Year 2 and Beyond:

- Involve greater state participation from both urban and rural regions in each area (dispatch, field, and hospital).
- Continue developing and refining standards and benchmarks with greater statewide participation.
- Coordinate linkage of data between the prehospital and treatment phase.
- Share data and results with EMSA as part of the continued development of statewide standards and benchmarks

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- Based on these and other experiences throughout the country, expand the QI efforts to develop a comprehensive method for continuously evaluating EMS system quality.

Existing grant or government funds will be needed to support these efforts. Specific tasks and implementation recommendations for this rapid cycle improvement approach to EMS quality improvement will be instituted in year 1 with subsequent efforts in year 2 and beyond focused on broader statewide participation and developing a comprehensive EMS system evaluation method. Ultimately, there needs to be adequate measurement tools and standards for the ongoing maintenance and improvement of patient care quality and EMS system evaluation.

Tasks

1. Explore adequate state funding to accomplish statewide QI structure and process to be compatible with national standards.
2. Design and establish a statewide QI structure and process in collaboration with the appropriate EMS participants.
3. Identify two to three indicators for QI in each of the three areas: dispatch area, field, and in the hospital.

Implementation Recommendations

1. Obtain public and private sector funding through existing resources:
 - Federal and state agencies (NHTSA, DOT, EMSA);
 - Federal & state legislation to develop new funding sources;
 - Private sector companies and foundations (health insurance companies and health plans).
2. EMSA hires a permanent full-time staff to coordinate the QI effort.
3. Identify five participating organizations through a request for proposals from EMSA in each of the areas: dispatch, the field, and hospital, which will share data regarding the identified indicators in a QI consortium.

Utilize existing grants/projects, as well as, fund new efforts as vehicles to develop and demonstrate the rapid cycle quality improvement model.

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| <p>4. Share results internally and with EMSA.</p> <p>Evaluate and publish results where appropriate.</p> <p>5. Promote legislation to ensure continuous medical quality improvement in the EMS system.</p> | <p>4. Develop standards and benchmarks for EMS system evaluation based on results.</p> <p>Continue to expand standards and benchmarks in the future</p> <p>5. Support legislative efforts to:</p> <ul style="list-style-type: none">• Protect quality improvement activities throughout all components of the EMS system: dispatch, prehospital provider agency, and local and state governments.• Encourage participation in a quality improvement process.• Protect patient confidentiality throughout the continuum of care (dispatch to follow-up) related to QI activities.• Protect QI process from discoverability.• Require and fund costs associated with ongoing, system wide data collection, linkage, and analysis, which can be used to promote the QI process in the EMS system. |
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References

1. National Highway Traffic Safety Administration. Emergency Medical Services Agenda for the Future, 1996.
2. Langle, G.J., Nolan, K.M., Nolan, T.W., Clifford, L.N., & Provost, L.P. The improvement guide: A practical approach to enhancing organizational performance. Jossey-Bass, 1996.